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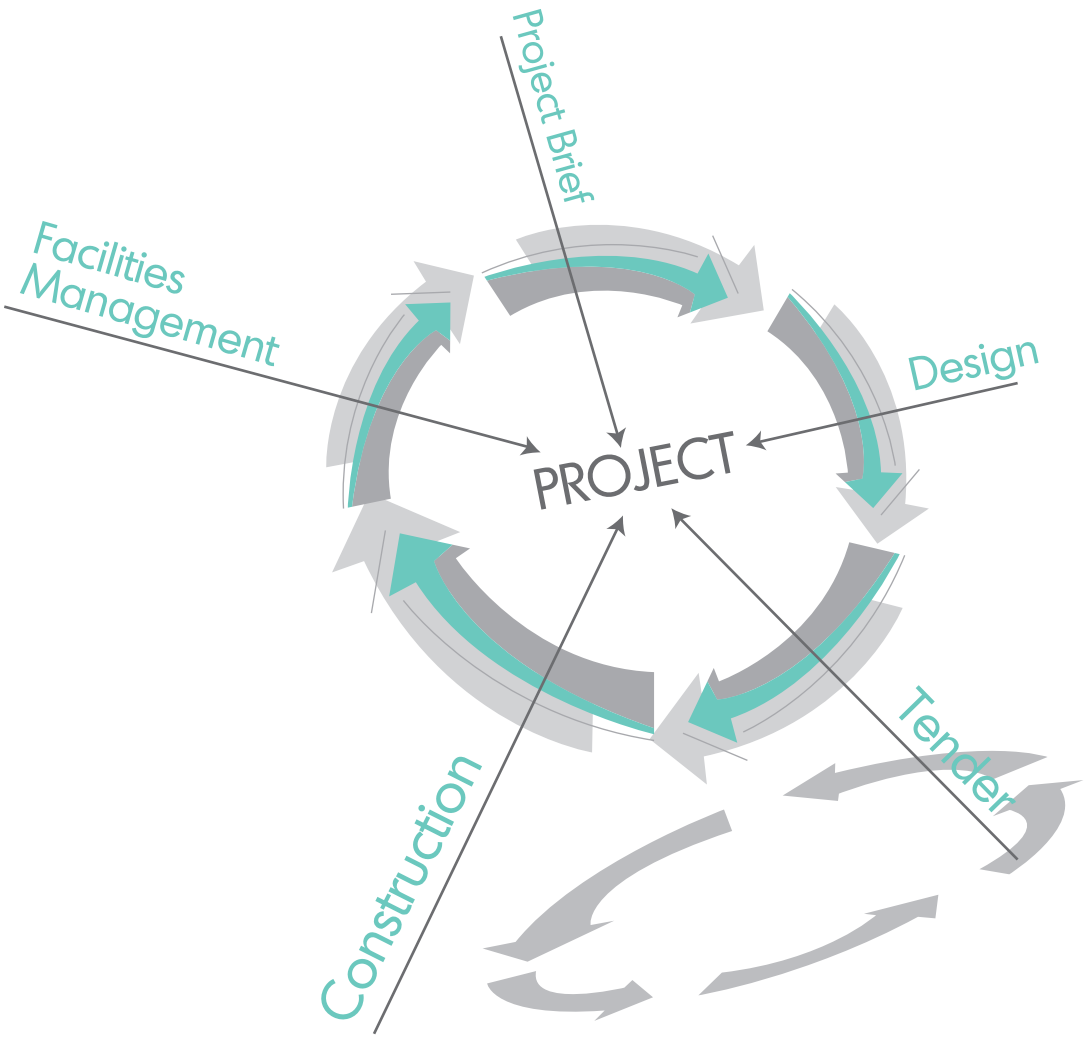

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Construction Research Institute of Malaysia (CREAM)
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IMPLICATION OF INCOMPLETE CONTRACT (IC) IN MALAYSIAN PRIVATE FINANCE INITIATIVE (PFI) PROJECTS

Nur Syaimasyaza Mansor[1], Khairuddin Abdul Rashid[2], Mohd Fairullazi Ayob[3] and Sharina Farihah Hasan[3]
[1]School of Housing, Building and Planning, Universiti Sains Malaysia, Penang, Malaysia
[2]Independent Consultant
[3]Department of Quantity Surveying, Kulliyyah of Architecture & Environmental Design, International Islamic University Malaysia, Kuala Lumpur, Malaysia

Abstract
Theoretically, contracts are inevitably incomplete. Incomplete contract (IC) is characterized by the absence of clearly defined, in its entirety, ex-ante the parties' requirements, rights and obligations and there are gaps, missing provisions, and ambiguities in its terms. On the one hand, IC exposes the contracting parties to the risk of opportunistic behavior, haggling, and disputes, but on the other hand, it allows flexibility to deal with uncertainty and change. Private Finance Initiative (PFI) contracts in Malaysia also cannot avoid being incomplete and there are twelve (12) clauses that contribute to the incompleteness. Literature review and two-round modified Delphi method were carried out to assess IC's implication in Malaysian PFI concession contracts. This paper aims to report on the said assessment. The findings showed that the presence of IC in PFI projects in Malaysia causes positive and/or negative implications. Most of the positive implications mentioned on the flexibility of the incomplete clause to deal with future changes and provide the parties opportunity to renegotiate. Meanwhile, many negative implications refer to delay, disputes, and the risk of opportunistic behavior. Input from this paper will facilitate contract designers, and those involved in PFI projects in emphasizing or giving attention to the aspect that contributes to contracting incompleteness and its implications and consequently improves the provisions when drafting new contracts.

Keywords: *Incomplete contract; Private Finance Initiative; Concession contract; Implication*

INTRODUCTION

The concept of incomplete contract (IC) concerns the substance of a contract. In principle, a contract must state the parties' responsibilities and the required actions in dealing with all anticipated incidents (Onishi et al., 2002). The contracting parties need to identify and address all uncertain situations which might occur in the agreements, where the potential future contingencies might be too numerous and/or too difficult to anticipate (Domingues & Sarmento, 2016). Hence, failing to identify future uncertainties and contingencies make a contract incomplete. Theoretically, a complete contract cannot be achieved and most contracts are inevitably incomplete (Domingues & Sarmento, 2016; Nur Syaimasyaza et al., 2017a). When there is IC, there is potential for inefficiency (Garvin, 2009) and dispute (Grant et al., 2012).

In Malaysia, the government is actively procuring infrastructure projects via Private Finance Initiative (PFI). However, past studies revealed that PFI contracts in Malaysia are incomplete, and the areas and clauses that contribute to the incompleteness has been identified (Nur Syaimasyaza et al., 2017a; Nur Syaimasyaza et al., 2017b). Hence, it is important to assess the implication of IC for the improvement of future PFI contracts.

This paper reports part of a four-years research programme regarding incomplete contract in PFI, which focus on the assessment of IC's implication based on PFI concession contracts in Malaysia through a two-rounds Modified Delphi with PFI experts. The remaining parts of the paper are structured as follow: a review of the literature on IC, PFI, and IC in PFI, descriptions of the methodology used, presentation of the results and the ensuing discussions. The paper concludes by highlighting the study's key findings.

LITERATURE REVIEW

Incomplete Contract (IC)

IC is defined as a contract that fails to clearly spell out ex-ante the parties' requirements, duties and obligations for every realized contingency and it has gaps, missing provisions, and ambiguities in its terms (Hart, 1995; Yates, 1998). A complete contract is just an imaginary concept used by people to define one endpoint of completeness (Craswell, 1999) as it is almost impossible to achieve complete contract (Grant et al., 2012; Habets, 2010) because parties always face with uncertainties which consequently requires them to renegotiate, breach or litigate.

A contract can be incomplete due to long-duration project (Iossa et al., 2007), high risk and uncertainty (Ya-zhuo & Fan, 2011), high transaction cost (Hart, 1995), bounded rationality (Kostritsky, 2004), and asymmetric information (Robinson & Scott, 2009). Table 1 presents the characteristics of IC. If a contract has in its provisions any one or more of the listed characteristics, then the contract is deemed incomplete.

Table 1. Characteristics of IC

No.	Characteristic	Keyword
1.	The contract has gap or loophole	GAP
2.	Contract has vague or ambiguous clauses	AMBIGUOUS
3.	There are additional work and changes	CHANGE
4.	The contract is renegotiated	NEGOTIATE

(Nur Syaimasyaza, 2017; Nur Syaimasyaza, Mohd Fairullazi, et al., 2017a)

Although the contract is incomplete, the contracting parties still can complete the transaction. However, under the existence of IC, the project's success may be affected either positively or negatively. Positive implication means that the presence of IC may help smoothen the progress of the project (Guasch, 2004) while negative implication refers to any implication that might disrupt the progress of the project or compromise the success of the project (Robinson & Scott, 2009).

Positive Implication

IC is flexible in dealing with complex and uncertain future (Boukendour, 2007; Miller et al., 2013). For long duration contract, such as toll road concession contract, flexible IC is preferred as the uncertainty of traffic flow is high (Athias & Saussier, 2010). IC allows the contracting parties to renegotiate when the need arises, to provide supplement terms to fill the missing terms or provided a solution to the contingency that they cannot forecast before (PPIAF, 2009). In some situation, a complete contract might jeopardize the ability to adapt to changing circumstances. The perfect example is in the case of chef Jamie Oliver criticizing

the quality of school dinner in Britain. As the schools are locked in 25 years PFI contracts, they cannot rid their menus of junk food as it is stated in the contract (Ellman, 2006). Besides that, the transaction cost for IC is claimed to be lower than complete contract (Miller et al., 2013) as the contracting parties sometimes leave out certain contingency when it is deemed not significant (Ya-zhuo & Fan, 2011), or the probability of the contingency to occur is very low (Triantis, 1999). Consequently, the process of drafting the contract can speed up by leaving out the contingency.

Negative Implication

IC exposes the contracting parties to the risk of opportunistic behavior, haggling, and disputes (Domingues & Sarmento, 2016; Ho & Tsui, 2009). Renegotiation conducted due to IC could also affect the project negatively as its execution will impose several costs (Bajari et al., 2014; Domingues & Sarmento, 2016; Guasch, 2004; Hart, 1995) i.e. extra cost, manpower, time. Conflicts and disputes happen when there are ambiguities in the contract, variations, and additional works. When variation and additional works are needed in the contract, it could cause time and cost overruns (Peter et al., 2010). Therefore, it could imply that by having IC, the project might experience time and cost overruns.

Private Finance Initiative (PFI)

PFI is an alternative procurement strategy that had been introduced to undertake some of the development of public infrastructures and services on behalf of the public sector. In PFI, the public sector will specify the required output and purchase the services provided by the private sector. On the other hand, the private sector will be responsible to finance, design, construct, manage, operate and maintain the project until the end of the concession period. Normally, the contract period expands to 20-30 years. United Kingdom (UK) becomes the pioneer in PFI when they introduced the procurement strategy in 1992. Malaysia started to implement PFI in 2006 and later it becomes a subset of Public-Private Partnership (PPP). PFI involves complicated contract structures as it involves a contract with various entities. The main contract i.e. concession contract is formed between government (public sector) and the special purpose vehicle (SPV). While SPV formed contracts with other entities to commence the project i.e. finance provider (i.e. debt provider, construction investor, facilities management investor and other investors), construction contractor and facilities management operator.

Some countries such as the UK, Northern Ireland, and Japan, have designed their own standard PFI contract. While in Malaysia, there is a standard template for PFI contract which is drafted by Attorney General's Chambers of Malaysia, but it is private and confidential. However, the standard contract can also become incomplete. Especially for standard PFI contract which has long contract duration, the provisions stated in the contract can easily become obsolete after some time. The prolonged contract duration exposes the PFI project to many risks and uncertainties. The risks include changes in social, economic, political and technological (Froud, 2003). Among past studies that contended that PFI contracts are inevitably incomplete are Guasch (2004), Iossa et al. (2007) and Ho & Tsui (2009).

IC in PFI

Seven (7) areas in PFI contract that are deemed incomplete from past studies were identified and they are: 1) concession charges; 2) service delivery; 3) design of output specification; 4) variation; 5) quality; 6) contract monitoring; and 7) sustainable element (Nur Syaimasyaza, 2017). These areas were used to identify the presence of IC in PFI projects, and the method is named as *PFI Area Rule*. The clause is categorized as incomplete if it matches with any one or more area that has been identified by past studies. Besides that, *IC Characteristic Rule* was used to identify the presence of IC, where the clause is categorized as incomplete if any one or more clause/sub-clause of the contracts show signs of IC characteristics (refer Table 1). By using the above methods, an analysis of eight Malaysian PFI concession contracts was carried out and the results found 12 clauses that are deemed incomplete (in a typical PFI contract). The clauses are as follow: 1) Condition precedent; 2) Concession charges; 3) Design and construction of the project; 4) Delay of the construction works; 5) Asset management services; 6) Service levels; 7) Additional works; 8) The concession company; 9) Force majeure; 10) Project monitoring committee; 11) Dispute resolution committee; and 12) Occupational safety and health requirements (Nur Syaimasyaza, 2017).

RESEARCH METHOD AND DESIGN

Intensive literature review and two rounds of modified Delphi (MD) were carried out to achieve the research objective. Literature review involved a review of past research to identify implications of IC, with specific reference to the twelve incomplete clauses identified. Data collected from literature review were then become input for the development of semi-structured questionnaires for MD.

Table 2. Administration of the MD technique

	Description
Panelist criteria	• Knowledge wise - possess at least a Degree in the area related to the practice of PFI for construction works, e.g. architect, quantity surveyor, engineer, banker, etc. • Skills - ability to make a sound judgment based on: 1) knowledge and experience in PFI implementation and contracts through involvement in PFI projects e.g. in the form of policy, planning, implementation, supervision etc.; or 2) the evidence of expertise such as past studies, publications, and positions. • Having worked experience in PFI projects in Malaysia.
Sample size	• Expert was identified from literature searches, pilot study, and web-search. • Snowball technique. • 23 experts were identified and invited to be the panelists. • 18 participated in Round 1 (78.2% rate of response), 13 participated in Round 2 (72.2% rate of response).

In the current study, two (2) rounds of MD involving 18 and 13 Malaysian PFI experts respectively were conducted (Table 2). MD is a variation of the Delphi technique. Delphi is a widely used method in achieving a consensus of experts' opinions concerning real-world knowledge on a specific area of studies. The techniques may be carried out in several styles (see discussions on MD in Mohd Fairullazi & Khairuddin (2016); Mohd Fairullazi (2014); Nur Syaimasyaza (2017); Nur Syaimasyaza et al. (2017a)).

For the first round MD questionnaire, the panelists were required to rate their level of agreement with the implications stated, on a 5-point Likert-type scale (i.e. 1. Strongly disagree, 2. Disagree, 3. Neutral/Not sure, 4. Agree, 5. Strongly agree) and they were also asked to give suggestions of other implication of IC with specific reference to each clause identified.

In the second round, the panelists were provided with descriptive statistic results obtained in the first round i.e. their mode score and descriptive statistic of the group response (mode and standard deviation (SD)). The mode score was calculated to determine the value that has the greatest frequency in the data set and SD score was calculated to measure the variability of response in the data set and the level of consensus achieved. In this round, the panelists were given the opportunity to re-rate their proposed scores in the first round and they were encouraged to provide the reason(s) if they decided to do so. Apart from that, the additional suggestions and comments received in the first round were consolidated and presented in a 5-point Likert type scale (i.e. 1. Strongly disagree, 2. Disagree, 3. Neutral/Not sure, 4. Agree, 5. Strongly agree). The panelists were required to state their degree of agreement of each item responses and the scores provided were then analyzed using the relative importance index (RII) technique in order to determine the ranking of the item responses (Mohd Fairullazi, 2014). The RII technique was used to identify which item responses that are important and significant to be included in the answer set of the question (Mohd Fairullazi, 2014). Higher RII score means higher ranking for the item. A 'cut-off' relative index of 0.60 on the 5-point Likert scale was applied (Muhwezi et al., 2014) and items that score RII 0.80 and above are categorized as 'Very significant' (Hamimah & Morledge, 2003; Mohd Fairullazi, 2014), while items that score between 0.79 and 0.60 are categorized as 'Significant'. Table 3 and Figure 1 present the indication and formula used to interpret the SD score and RII formula respectively.

Table 3. Standard deviation and level of consensus

Standard Deviation (SD)	Level of consensus achieved
$0 \leq X < 1$	High level of consensus
$1 \leq X < 1.5$	Reasonable/ fair level of consensus
$1.5 \leq X < 2$	Low level of consensus
$2 \leq X$	No consensus

(Mohd Fairullazi, 2014 and Nur Syaimasyaza, 2017)

$$RI = \frac{n1(1) + n2(2) + n3(3) + n4(4) + n5(5)}{5N}$$

Where:
n1 = Number of respondents for "Strongly disagree"
n2 = Number of respondents for "Disagree"
n3 = Number of respondents for "Neutral/Not sure"
n4 = Number of respondents for "Agree"
n5 = Number of respondents for "Strongly agree"

Figure 1. RII formula (Nur Syaimasyaza, 2017)

RESULTS AND DISCUSSION

Out of nine (9) implications presented to the panelists, only one implication (Code: 450) achieved mode score '2' for both rounds, which indicates that most panelists 'Disagree' with the implication (Table 4). Meanwhile, the remaining implications achieved mode score '4' which means that most panelists 'Agree' with the implications identified for each clause and

the level of consensus indicate 'high level of consensus' achieved as the SD scores are below 1.00.

Table 4. Mode and SD score for Round 1 and Round 2 MD (Nur Syaimasyaza, 2017)

[1]Code	Implications	1st round		2nd round	
		Mode	SD	Mode	SD
	Clause B - Concession Charges				
370	Renegotiation creates room for opportunistic behavior	4	0.42	4	0.49
380	The failure to forecast future demand with confidence could affect the concession company's profit flow.	4	0.84	4	0.76
	Clause E - Asset Management Services				
390	The difficulties in specifying soft service delivery due to the problem of subjectivity cause dispute over the interpretation of: a) the levels of service; and	4	0.65	4	0.00
400	b) standard	4	0.65	4	0.00
	Clause F - Service Levels				
410	Unanticipated service delivery problem	4	0.67	4	0.89
420	Risk of opportunistic behaviour	4	0.00	4	0.00
	Clause G - Additional Works				
430	Enormous time was spent to make changes/variation.	4	0.84	4	0.79
440	Changes to the contract represented a fertile area for opportunistic behavior	4	0.97	4	0.98
	Clause J - Project Monitoring Committee				
450	Lack of efficient monitoring system is one of the reasons for the failure of PPP contracts	2	0.95	2	0.98

Additional implications suggested by the panelist in Round 1 MD were consolidated into 50 implications and they were presented to the panelists in Round 2 to be rated. Scores obtained from the panelists in Round 2 MD were transformed into important indices factors using RII formula (Figure 1). Table 5 below presents the RII score for each implication. From the list, implication 460, 510, 520, 590, 600, 640, 650, 660, 700, 710, and 870 are considered 'Very significant' with RII scores 0.80 and above. Implication 550 and 890 did not achieve the 'cut-off' relative index of 0.60 and they were excluded from the final result. Other implications achieved RII score 0.60 to 0.79 and they are considered 'Significant'.

Table 5. RII score for additional implications obtained from Round 1 MD (Nur Syaimasyaza, 2017)

Code[1]	Suggested implications	RII	Rank	Significant
	Clause A - Condition precedent			
460	**Negative implication:** Delay in concluding the document to be submitted and consequently affecting the project execution	0.82	1	Very significant
470	Failure to prepare the document (originally not specified in the contract), when the need arises	0.74	4	Significant
480	Exploitation of the contract clause (incomplete contract) by involved parties	0.75	3	Significant
490	The dispute in interpreting the ambiguous clause (determining the required document)	0.78	2	Significant
500	**Positive implication:** Provides flexibility to deal with future uncertainty, e.g. the party can request for additional documents if needed in the future	0.69	1	Significant
	Clause B - Concession Charges			
510	**Positive implication:** Allow for any improvement to be made when there are changes to asset management service charges	0.83	1	Very significant
520	Allow the parties to deal with uncertainty and benefit from the renegotiation	0.80	2	Very significant

Code[1]	Suggested implications	RII	Rank	Significant
	Clause C - Design and Construction of the Project			
530	**Negative implication:** The additional cost to the concession company, because they usually will have to comply with the request for the variation at their own cost.	0.66	2	Significant
540	Delay and dispute in the project due to changes in design	0.71	1	Significant
550	The additional cost to the government due to changes in design (the government need to bear the cost to make changes)	0.58	3	
560	**Positive implication:** Minimal interruption of the construction works from the government (in the case where the clause did not specify the possibility for the government to make changes)	0.71	2	Significant
570	Allow the government to request for changes without any cost implication (since the clause is silent on the Government's rights to issue change, the Government can persuade the Concession company to make the change without cost increment)	0.62	3	Significant
580	Provide flexibility to implement a new and better technology/specification	0.78	1	Significant
	Clause D - Delay of the Construction Works			
	-No suggestion has been made-			
	Clause E - Asset Management Services			
590	**Negative implication:** Time-consuming for the approval process of variation due to several rounds of negotiation	0.83	2	Very significant
600	Dispute arises due to incomplete contract	0.85	1	Very significant
610	**Positive implication:** Provide flexibility to improve and revise the necessary level of service and standard	0.78	1	Significant
620	Allow both parties to deal with uncertainty and future changes	0.78	1	Significant
	Clause F - Service Levels			
630	**Negative implication:** Unable to apply the true Asset Facility Management (the clause only focuses on the aspect of maintenance)	0.66	1	Significant
640	**Positive implication:** Improve or refine the quality of maintenance	0.83	1	Very significant
650	Provide flexibility to cater future change	0.83	1	Very significant
660	Provide an opportunity for the parties to renegotiate, to deal with future uncertainty.	0.82	3	Very significant
	Clause G - Additional Works			
670	**Negative implication:** Risk of opportunistic behavior, e.g. the SPV increases the price for Additional Works.	0.78	1	Significant
680	**Positive implication:** Provide flexibility to deal with future changes	0.78	3	Significant
690	Fair to both sides to deal with uncertainty and future changes	0.78	3	Significant
700	Provide an opportunity for both parties to achieve a win-win solution	0.80	2	Very significant
710	Allow the government to request additional works in the future	0.82	1	Very significant
	Clause H - The Concession Company			
720	**Negative implication:** Change in shareholder could affect project performance	0.72	5	Significant
730	Change in shareholder may result in a change in work culture	0.71	6	Significant

Code[1]	Suggested implications	RII	Rank	Significant
740	Leeway for the concession company to escape from their responsibility (The clause 'Change in Shareholding' could cause the Concession company to have the mindset that they can withdraw from the contract and thus they design and construct the project without considering the maintenance phase)	0.66	9	Significant
750	Negatively affect the government due to the uncertain performance of the new shareholders	0.68	8	Significant
760	Tedious work to prepare the paperwork for the change in shareholding	0.66	9	Significant
770	Revise terms and conditions in the agreement might put the concession company on the disadvantage side	0.71	6	Significant
780	Cost and time implication due to negotiation process	0.77	1	Significant
790	Risk of opportunistic behavior, e.g. the party refuses to agree on the calculation of the Refinancing Gain.	0.77	1	Significant
800	The dispute in determining the basis and method of calculation for Financing Gain	0.74	3	Significant
810	Delay in determining the method and calculation of the Refinancing Gain	0.74	3	Significant
820	**Positive implication:** Change in shareholder could strengthen the whole corporate structure.	0.68	3	Significant
830	Allow the government to revise any terms and conditions in the agreement to benefit the government in the event there are changes in shareholders.	0.66	4	Significant
840	Allow both parties to deal with uncertainty and future changes	0.77	1	Significant
850	Allow the parties to refer to the latest method and calculation of Refinancing Gain	0.72	2	Significant
	Clause I - Force Majeure			
860	**Negative implication:** Disputes in interpreting the term 'substantial cost'	0.78	1	Significant
870	**Positive implication:** Allow both parties to deal with uncertainty and future changes	0.82	1	Very significant
	Clause J - Project Monitoring Committee			
880	**Negative implication:** Disputes due to lack of guidelines on what the Project Monitoring Committee could do and cannot do	0.72	1	Significant
890	Delay in project performance	0.58	3	
900	Unfair practice or unfair decision making due to lack of guidelines	0.63	2	Significant
	Clause K - Dispute Resolution			
910	**Negative implication:** Lead to delay in resolving the disputes, e.g. lack of guidelines on what the Dispute Resolution Committee could do and cannot do	0.72	2	Significant
920	Lead to disputes	0.74	1	Significant
	Clause L - Occupational Safety and Health Requirements			
930	**Negative implication:** Lack in the implementation of safe work culture	0.65	2	Significant
940	Sub-standard compliance with the safety and health requirement (safety and health element is not taken into consideration in their cost estimation during tendering)	0.66	1	Significant
950	Unable to refer to any related clause, in the event, there is an accident/incident	0.65	2	Significant

[1] All items and responses obtained from both rounds' MD were coded in an increasing number of 10 (i.e. 10, 20, 30, etc.). Coding presented in this paper is as in the author's PhD dissertation [8].

The results from both rounds MD had identified and assessed 56 implications of the incomplete clause. Interestingly, the incomplete clause could have both positive and negative implication as shown above for Clause Condition Precedent, Clause Concession Charges, Clause Design and Construction of the Project, Clause Asset Management Services, and

others. Among the positive implications identified, most of them are regarding the flexibility of the incomplete clause to deal with future change and opportunity to renegotiate. This is similar with the findings by Athias & Saussier (2010) where IC is preferred because of its flexibility to deal with the uncertainty of traffic flow.

On the other hand, most negative implications are concerning delay, disputes, and risk of opportunistic behavior. The finding is consistent with previous scholars i.e. Ho & Tsui (2009), Robinson & Scott (2009) and Domingues & Sarmento (2016). Based on the findings above, it has been confirmed that the presence of IC in PFI projects in Malaysia could have both positive and negative implications.

CONCLUSIONS

This study has successfully identified and assessed 56 implications of IC in PFI projects in Malaysia with specific reference to each incomplete clause. Most of the positive implications are concerning flexibility to deal with future change and opportunity to renegotiate. While, negative implications are mostly regarding the delay, disputes, and risk of opportunistic behavior.

Although IC cause positive implication, the fact that negative implication could also occur, PFI stakeholders cannot take the matter lightly and they should be ready with strategies to minimize or eliminate the negative implication. Besides, strategies to improve or maintain the status quo of the positive implication is also important to ensure the smoothness of the project's implementation.

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